

XVII.—*Characters of Coilostele, an undescribed Genus of Auriculacea* (?), and of *Species of Helix, Pupa, and Ancyclus, from India, West Africa, and Ceylon.* By W. H. BENSON, Esq.

COILOSTELE, B., nov. gen.

Testa imperforata, elongato-cylindrica; axis columellaris interna spiræ obsoleta. Apertura semiovata; margine columellari superne oblique subspiraliter uniplicata.

*Coilostele scalaris*, B.

*C.* testa imperforata, elongato-cylindrica, lævi, hyalina, nitida; spira elongata, gradatim scalariter attenuata, apice obtuso, sutura profunda; anfractibus 6, convexiusculis, superne obtuse angulatis, penultimo cylindræo; apertura subobliqua, semiovata, subpyriformi; peristomate tenui, recto, marginibus remotis, margine columellari crassiusculo, plica spirali obliqua elongata superne intrante munito.

Long. 3, diam. vix 1 mill. Apert.  $\frac{2}{3}$ , lata  $\frac{1}{2}$  mill.

Habitat ad Humeerpore, Bundelkhund, prope ripas fluviorum Jumna et Betwa.

I discovered this shell, in October 1826, in the sand of the Betwa river, while searching for *Achatina Balanus*, of which I had taken a specimen in the aperture of a derelict *Helix*; and after a few days I took dead specimens, with the same minute *Achatina*, among the clay-covered roots of a large tree which had fallen in the peafowl jungle on the left bank of the Jumna opposite to Humeerpore, and in a dried hollow near it, whither those shells had been washed in the rains with *Bulimus gracilis*, Hutton. In January 1839 I took, I believe, a single specimen among the porphyritic and greenstone rocks of the singular crater-like hill of Khaneen, sixteen miles south of Hansi, in the Delhi district, but broke it before I could examine it under a lens.

In a list published in the Calcutta 'Gleanings in Science' of 1829 I set this shell down as a minute *Pupa*; but on observing that the spiral column was obsolete or absorbed, as in the genus *Pythia* (*Scarabus*), I came to the conclusion that the form really belongs to the family of Auriculacea. In the other inland genus, *Carychium*, the spiral column is intact, except close to the summit, although in the littorine genera *Alexia*, *Auricula*, *Melampus*, and *Cassidula* I find the internal structure of the spire similar to that of *Coilostele* and *Pythia*.

In *C. scalaris* the aperture has some resemblance to that of *Jamina*, Say, a North-American marine operculate genus, which Küster included in the Auriculacea, but which is now referred to the Pyramidellidæ.

Shortly before 1853, Capt. T. Hutton collected specimens of

*C. scalaris* in the exuviæ of the River Ganges, probably in the Do-áb portion of the stream.

With reference to the internal spiral formation of *Pythia*, Pfeiffer observes:—"Testa ut plures Auriculacorum sectiones ea peculiaritate notabilis est quod septa interiora in anfractibus superioribus desint, observante primo cl. Chemnitzio." Küster also quotes Chemnitz's observations on the same appearance in the genus; but I can trace no record in Pfeiffer respecting the other genera in which it has been observed. In *Alexia* the animal cone runs up the hollow, and has evidently absorbed the portion of the shell which it has displaced.

It is worthy of record that, about the year 1843, Capt. W. J. Boys took specimens of *Achatina Balanus* at the Taj, near Agra, in company with a minute *Carychium*, very similar to the Himalayan species *C. indicum*, B.; subsequently Capt. Hutton found it in the exuviæ of the River Ganges; and in 1857, Mr. W. Theobald found the same *Achatina* at Gopnáth, in Kattiwár. These shells may have a still wider range, being overlooked in consequence of their minute size.

*Helix palmaria*, B.

*H. testa perforata*, subconica, spiraliter 7-lirata, striis filosis obliquis confertissimis decussata, sub epidermide cornea albida; spira subconica, apice obtusiusculo lævigato, sutura impressa; anfractibus  $6\frac{1}{2}$ , convexis, ultimo subtus convexiusculo, peritremate leviter carinato; apertura obliqua, late angulato-lunata, subsecuriformi; peristomate tenui, recto, margine columellari superne breviter expansiusculo.

Diam. major  $8\frac{1}{2}$ , minor 8, axis 6 mill.

Habitat ad montem Nundydroog in regione Mysoriana.

Two imperfect specimens were found by my son, Capt. C. A. Benson, on the Fort Hill of Nundydroog, north of Bangalore, in Mysore, and a single specimen (fully grown, but weathered) by my daughter, Mrs. R. H. Sankey, at the same place, about 4000 feet above the level of the sea. It is very distinct from the various lirata species described by the Messrs. Blanford in the 'Journal of the Asiatic Society' for 1861, from the hill-ranges of Southern India.

*Helix contracta*, Hutton, MS.

*H. testa late umbilicata*, depressa, discoidea, oblique striatula, lævigata, nitidula, albida, fascia rufescente supra angulum superiorem cincta; spira planata, apice vix elevatiore, sutura impressa; anfractibus 4, sensim accrescentibus, convexiusculis, ultimo supra peripheriam compressiusculo subangulato, antice latiore oblique descendente, subtus convexo, umbilicum mediocrem, medio anguste excavatum, suturaque brevi profunda munitum

circumstante ; apertura valde obliqua, lata, ovato-lunari ; peristomate non continuo, superne expansiusculo, subhorizontali, infra reflexiusculo, marginibus conniventibus approximatis.

Diam. major 13, minor 10, alt. 4 mill. Apert. lata  $5\frac{1}{2}$ , alt. 4 mill. Habitat prope Mhow, Malwa. Detexit Capt. T. Hutton.

This shell approaches *H. Nilagirica*, Pfr., but may at once be distinguished by its narrower umbilicus, showing only one and a half less convex whorls, by its flatter spire, different surface, and less suddenly deflected last whorl, which is subangulate and not rounded at the periphery, also by the non-continuous peristome. It occupies an intermediate place between the southern *H. Nilagirica* and the Bundelkhund *H. asperella*, Pfr., first taken by me in 1824, also taken at Mhow by Capt. Hutton. It is worthy of remark that on the underside of *H. Nilagirica* there is a tendency to granulation like that of *H. asperella*, but that *H. contracta* presents no trace of it\*.

#### *Pupa Thibetica*, B.

*P.* testa rimato-subperforata, oblongo-ovata, lævigata, translucente, vitrea ; spira ovata, apice obtuso, sutura impressa ; anfractibus 5, subconvexis, ultimo antice ascendente ; apertura obovata, 6-plicata, plica 1 parietali angulari, secunda inferiore profunda, dentibus 2 columellaribus duobusque palatalibus profundis munita ; peristomate tenui, expansiusculo, margine columellari reflexiusculo. Long. 2, diam. 1 mill.

Habitat ad Iskardo, Thibet. Detexit Dr. Thomson.

This shell, received some years ago through Mr. Woodward of the British Museum, is nearly allied to *P. Huttoniana*, Bens., to which I erroneously referred it originally ; but, on close examination, perfect specimens exhibit two parietal plaits, one of which is remotely seated, and in some positions is not easily detected.

#### *Pupa Gutta*, B.

*P.* testa obsolete rimata, oblongo-ovata, lævigata, tenui, pallide cornea, translucente ; spira obtuse ovata, sutura impressa ; anfractibus  $4\frac{1}{2}$ , convexiusculis, ultimo antice vix ascendente ; apertura obliqua, edentula, angulato-rotundata ; peristomatis marginibus remotis, dextro recto acuto, columellari expansiusculo.

Long.  $1\frac{2}{3}$ , diam. 1 mill.

Habitat in valle Spiti, Kunawurensi. Detexit W. Theobald.

A single specimen, apparently adult, was received from Mr.

\* On referring to Capt. Hutton's description of an unnamed *Carocolla*, in page 520 of the 'Journal of the Asiatic Society of Bengal' for 1834, which was found by him between Nimuch and Mhow, I have come to the conclusion that it is intended for the shell subsequently received from him under the MS. name of *Helix contracta*.

Theobald. *Pupa Himalayana*, Hutton (Annals, Dec. 1863), an elongate and strongly sculptured shell, is the only edentate species previously described from the Himalayan region.

*Pupa Eurina*, B.

*P. testa perforata*, ovato-cylindrica, solidiuscula, suboblique striatula, rufo-castanea, nitidula; spira ovato-cylindrica, apice obtuso, sutura impressa, submarginata; anfractibus 7-7½, convexis, ultimo antice ascendente; apertura semiovata, subobliqua, edentula; peristomate expansiusculo, albedo, margine dextro extus postice incrassato.

Long. 2½, diam. 1 mill.

Habitat ad Tribeni Ghát fluminis Gogra. Detexit W. Theobald.

This shell closely approaches the edentulate variety of *P. marginata*, Drap. (*muscorum*, L.), in form and aperture. It is much larger than the British specimens of that species, and more solid, and may easily be distinguished by its decided perforation, instead of being merely rimate, and by the margination of the suture. The specimens sent by Mr. Theobald were all derelict, and some are deficient in colour.

*Pupa Ofella*, B.

*P. testa vix rimata*, globoso-ovata, confertim striatula, albedo-vitrea, translucente, polita; spira subovata, superne convexa, apice obtuso, sutura impressa; anfractibus 4, convexis, ultimo antice non ascendente; apertura vix obliqua, angulato-ovata, 4-dentata, plica parietali mediana curvata duplici subdenticulata intrante, dente columellari marginali magno crasso bicuri palatalibusque 2 marginalibus (superiore infra elongato, inferiore acuto) munita; peristomate incrassato.

Long. 1½, diam. 1 mill.

Habitat prope Liberiam Africæ occidentalis.

This minute shell (long mislaid) has been several years in my possession: it fell out of the interior of one of several shells from Liberia, and appears to have been overlooked by collectors, and not to have been obtained by the describers of species from that part of Africa. The shell is in excellent condition, and its animal had probably crept with it into the aperture of the deserted shell of another species. There is a bright red appearance internally, which leads to the belief that a portion of the animal is scarlet, as in *Ennea bicolor* and several Mauritian *Pupæ*.

*Ancylus Ceylanicus*, B.

*A. testa suboblange conoidea*, antice convexa, postice concava, extus tenuissime radiato-costulata, costis subremotis elevatioribus munita, striis confertis concentricis decussata, viridescenti-cornea, margine lato, lutescenti-cornea, apice submediano, subelongato, postice at-

tenuato, acutiusculo, ad dextram leviter verso; apertura subrotundato-ovata, intus albida nitente.

Long. 6, lat. 4, alt.  $2\frac{1}{2}$  mill.

Habitat in regione Matelle Ceylanica.

Two specimens were procured by Mr. F. Layard from the Lagalle division of the Matelle district. This is the first species of the genus which has been found in Ceylon. It is related to the European *A. fluviatilis*, but may at once be distinguished by the elevated radiate ribs which occur at short intervals and, equally with the depressed spaces, are marked longitudinally with the minute ribs at their sides.

M. Bourguignat represents *Ancylus Baconii* as occurring in Bengal. *A. Verruca*, Bens. (Annals for January 1855), taken by me at Bhimtal, and by Dr. Bacon and myself in Rohilkhund, and which was found by Mr. Theobald in Orissa, is the sole Indian species decidedly known. I strongly suspect that M. Bourguignat's species is that which was taken by Dr. J. F. Bacon at Henley Park, six miles from the Darling Range, in West Australia.

Cheltenham, Dec. 26, 1863.

*Erratum.*—In 'Ann. & Mag. Nat. Hist.' for December 1863, p. 427, line 11 from top, for "parietal" read "columellar."

XVIII.—*Notes on some Molluscous Animals from the Seas of China and Japan.* By ARTHUR ADAMS, F.L.S. &c.

"THERE is in shell-fish something more to consider than their shells," observes wise old Adanson; and indeed we are all aware that a knowledge of its testaceous envelope is not always sufficient to determine the natural position or affinities of a mollusk. I lately placed my genus *Scaliola* with the "Wentletraps," and associated my *Diala* with *Planaxis*; *Fenella* also fared no better, and was regarded by me as a Pyramidellid. On becoming acquainted, however, with the animals of those genera, I have been enabled, by means of the 'Annals,' to refer them to their natural families; and as any account of these molluscous creatures, written down from careful observation on the spot, must be of interest, I have thrown together some of my notes for insertion in your Journal. The photographic art may some day be applied to portray the forms of the Mollusea: in the meantime, accurate drawings should not be despised; and I trust at some future period to be able to reproduce a few of mine of the mollusks of Japan.

*Photinula quasita*, A. Ad.

*P. testa orbiculato-conica, imperforata, spira elatiuscula, regione*